Triple Bonds

Again, this same model can be used to explain triple bonds! As before, hybrid orbitals are used to form the σ framework.



The two π bonds are then formed by the overlap of the two sets of unhybridized 2p orbitals from the carbon atoms.

Hybridization and shape:

- If electron pair geometry (EPG) is linear hybridization is sp
- If EPG is trigonal planar hybridization is sp^2
- If EPG is trigonal bipyramidal hybridisation is sp³d
- If EPG is octahedral hybridization is sp³d²

Hybridization and Bond Lengths

Hybridization shows a small affect on bond lengths, for example, the more s-character a bond has, the shorter it will be. This is because electrons are held closer to the nucleus and so feel a greater attraction to it.



- 1. Draw a Lewis dot structure
- 2. Calculate the number of bonds and lone pairs for the atom you're looking at (double and triple bonds count as one bond each)
- 3. Find the hybridization type from the table below:

Number of bonds and lone pairs	Hybridization	Shape
2	sp	Linear
3	sp ²	Trigonal Planar
4	sp ³	Tetrahedral